

***Acropleurophialis simplex* gen. & sp. nov. from China**

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ABSTRACT—A new asexual ascomycete genus and species, *Acropleurophialis simplex*, collected on dead branches of an unidentified broadleaf tree in Jiangxi Province, China, is described and illustrated. The fungus is distinguished by macronematous, unbranched, determinate or percurrently extending conidiophores, and solitary, semi-endogenous, simple, smooth, spherical or subspherical, aseptate, pale brown to subhyaline conidia seceding schizolytically from polyphialidic, integrated, terminal and intercalary, sympodial, cylindrical conidiogenous cells with conspicuous collarettes.

KEY WORDS—hyphomycetes, saprobes, taxonomy

Introduction

Jiulianshan Mountain, located in the south of Jiangxi Province, China, lies at 24.4883–24.6486°N 114.3806–114.5256°E. It covers c. 134 km² and has a humid subtropical climate with an average annual temperature of 16.4°C and an average annual precipitation of 2155.6 mm. The main forest types are primary subtropical evergreen broadleaf forest. Such conditions are particularly suitable for the growth of microfungi. During our continuing survey of

saprobic hyphomycetes in this region, an interesting fungus was collected, that is significantly different from all previously described hyphomycetes (Seifert & al. 2011, Index Fungorum 2022), and therefore, a new genus, *Acropleurophialis*, is erected for it.

Materials & methods

Samples of dead branches were collected and placed in ZiplocTM plastic bags for transport to the laboratory, where they were processed and examined as described by Ma & al. (2011). Microphotographs were prepared using a Nikon Eclipse E200 and a SmartV550Dc digital camera, with a 100× (oil immersion) objective at the same background and scale. Adobe Photoshop 7.0 was used for image processing to assemble photographs into a plate. The studied specimens were deposited in the Herbarium of Jiangxi Agricultural University, Plant Pathology, Nanchang, Jiangxi, China (HJAUP).

Taxonomy

Acropleurophialis Y.F. Hu, X.G. Zhang, R.F. Castañeda & Jian Ma, **gen. nov.**

IF 559774

Differs from *Dictyochaeta* by its lack of setae, and its polyphialidic conidiogenous cells with spherical or subspherical, aseptate conidia; and from *Phialogeniculata* by its conidiogenous cells without stipitate collarettes, and its aseptate conidia.

TYPE SPECIES: *Acropleurophialis simplex* Y.F. Hu & al.

ETYMOLOGY: *Acro-* (Latin) meaning terminal + *pleuro-* (Latin) meaning lateral + *phialis* (Latin) referring to the phialidic conidiogenesis of this anamorphic fungus.

Asexual fungi. COLONIES effuse, brown to dark brown, hairy. Mycelium superficial or immersed. Setae and hyphopodia absent. CONIDIOPHORES macronematous, mononematous, unbranched, septate, smooth, determinate or indeterminate, with several enteroblastic percurrent extensions. CONIDIOGENOUS CELLS polyphialidic, integrated, terminal and intercalary, sympodial, cylindrical, with conspicuous collarettes. Conidial secession schizolytic. CONIDIA solitary, semi-endogenous, simple, smooth, spherical or subspherical, aseptate, pale brown to subhyaline.

Acropleurophialis simplex Y.F. Hu, X.G. Zhang, R.F. Castañeda & Jian Ma,
sp. nov.

FIG. 1

IF 559775

Differs from *Dictyochaeta* spp. by its lack of setae, and its polyphialidic conidiogenous cells with spherical or subspherical, aseptate conidia; and from *Phialogeniculata* spp. by

its conidiogenous cells without stipitate collarettes, and its aseptate conidia.

TYPE: China, Jiangxi Province: Jiulianshan Mountain, on dead branches of an unidentified broadleaf tree, 2 Nov. 2013, J. Ma (**Holotype**, HJAUP M0083-2).

ETYMOLOGY: refers to the simple conidia.

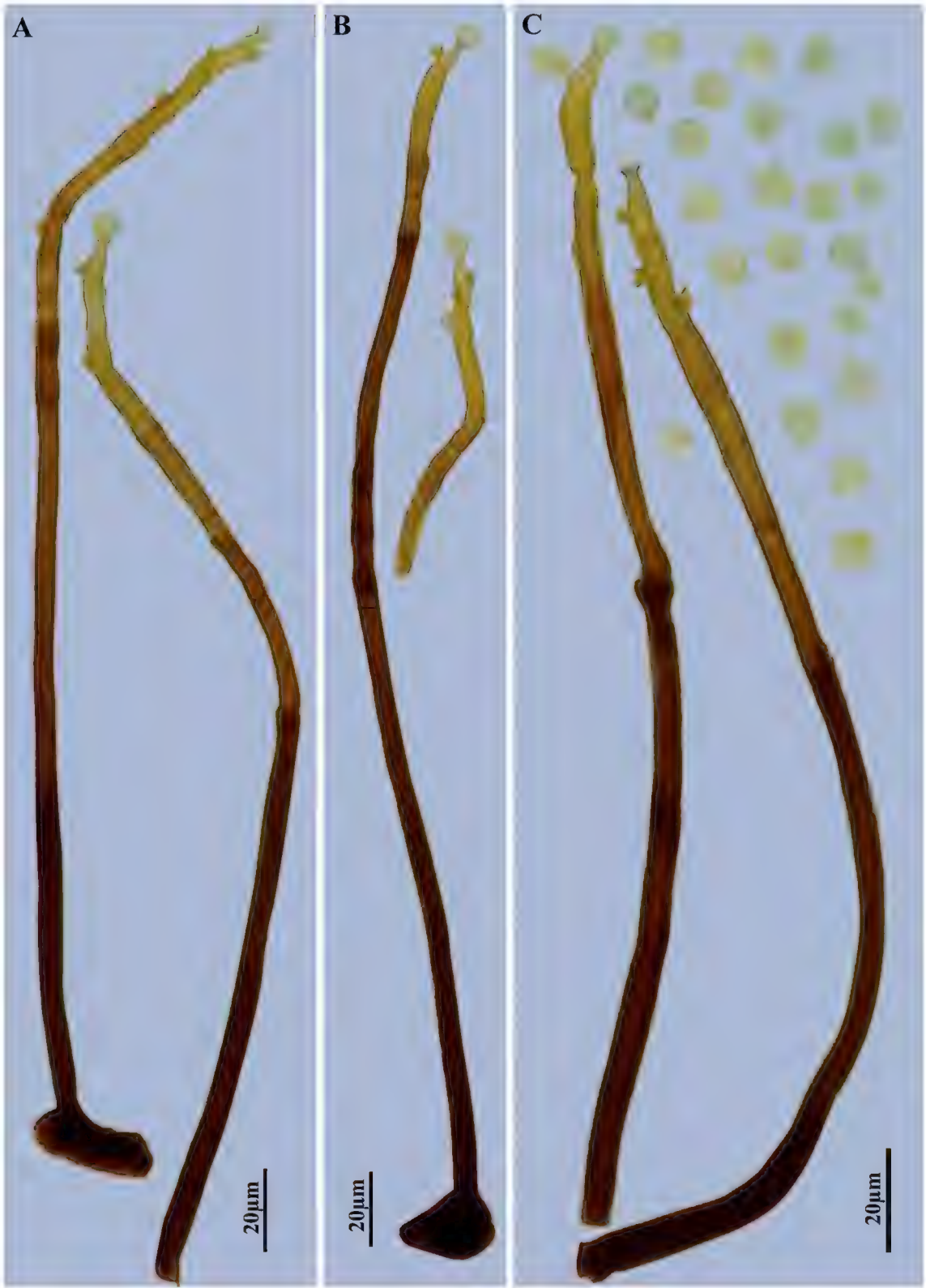


FIG. 1. *Acropleurophialis simplex* (holotype, HJAUP M0083-2). Conidiophores, conidiogenous cells, and conidia.

Asexual fungi. COLONIES on the natural substrate effuse, brown to dark brown, hairy. Mycelium partly superficial and immersed, composed of branched, septate, pale brown to brown, smooth-walled hyphae. Setae and hyphopodia absent. CONIDIOPHORES macronematous, mononematous, unbranched, 4–17-septate, smooth, brown to dark brown, paler towards the apex, determinate or indeterminate, with 1–2 enteroblastic percurrent extensions, 175–335 μm long, 5–7 μm wide. CONIDIOGENOUS CELLS polyphialidic, integrated, terminal and intercalary, sympodial, cylindrical, brown to pale brown, smooth, with conspicuous and flared collarettes, $19.5\text{--}36 \times 5\text{--}6.5 \mu\text{m}$. Conidial secession schizolytic. CONIDIA solitary, semi-endogenous, simple, smooth, spherical or subspherical, aseptate, pale brown to subhyaline, 7.5–8.5 μm in diameter.

Discussion

Acropleurophialis simplex is distinguished by its macronematous, unbranched, determinate or percurrently extending conidiophores with polyphialidic, integrated, terminal and intercalary, sympodial, cylindrical conidiogenous cells with conspicuous collarettes, and solitary, semi-endogenous, simple, smooth, spherical or subspherical, aseptate, pale brown to subhyaline conidia. It has similar conidial ontogeny to *Phaeoacremonium* W. Gams & al. (Crous & al. 1996), *Phialogeniculata* Matsush. (Kobayasi 1971), and *Dictyochaeta* Speg. (Spegazzini 1923). However, *Phaeoacremonium* differs by its aculeate conidiogenous cells and inconspicuous collarettes; *Phialogeniculata* differs by its geniculate conidiophores with several lateral apertures surrounded by brown, stipitate, funnel-shaped collarettes, and obclavate, septate conidia. In *Dictyochaeta*, the setae are frequently present beside conidiophores, and, together with the conidiophores, setae form small clusters, and mono- or polyphialidic conidiogenous cells produce typically falcate, 0–3-septate, slimy conidia, usually with a setula at each end (Gamundi & al. 1977, Kuthubutheen & Nawawi 1991, Whitton & al. 2000).

Several other genera, including *Phialophora* Medlar, *Craspedodidymum* Hol.-Jech., *Zakatoshia* B. Sutton, *Stephembruneria* R.F. Castañeda, *Anacraspedodidymum* C.R. Silva & al., and *Ramiphialis* F.R. Barbosa & al. have phialidic conidiogenesis like *Acropleurophialis* (Medlar 1915, Holubová-Jechová 1972, Sutton 1973, Castañeda-Ruíz 1988, Silva & al. 2014, Barbosa & al. 2020). However, the conidiogenous cells are monophialidic in these six genera, whereas those of *Acropleurophialis* are polyphialidic.

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